April 8, 1924. 1,489,513

H. E. ANSON

HEATING DEVICE FOR PRIMERS

Filed Feb. 20. 1922

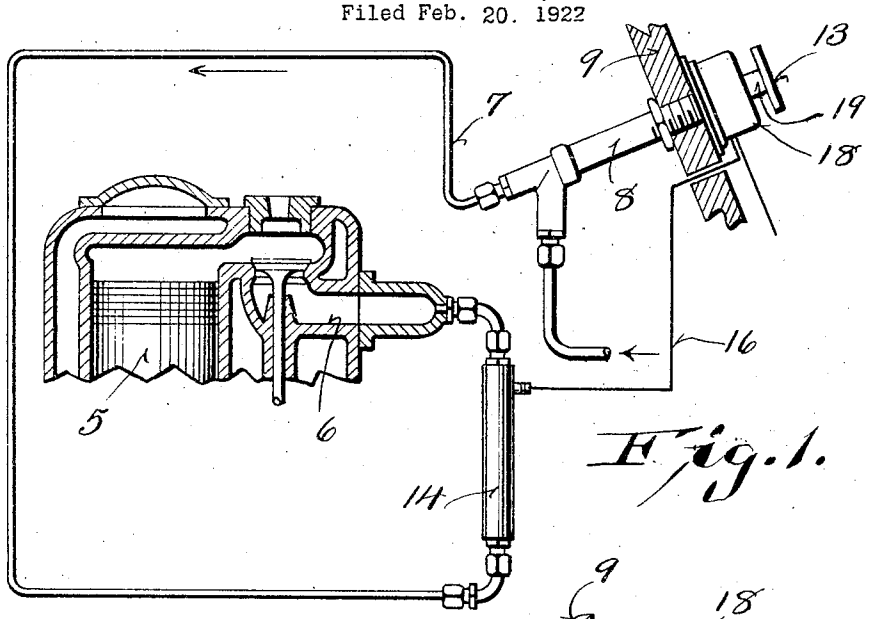


Fig. 1.

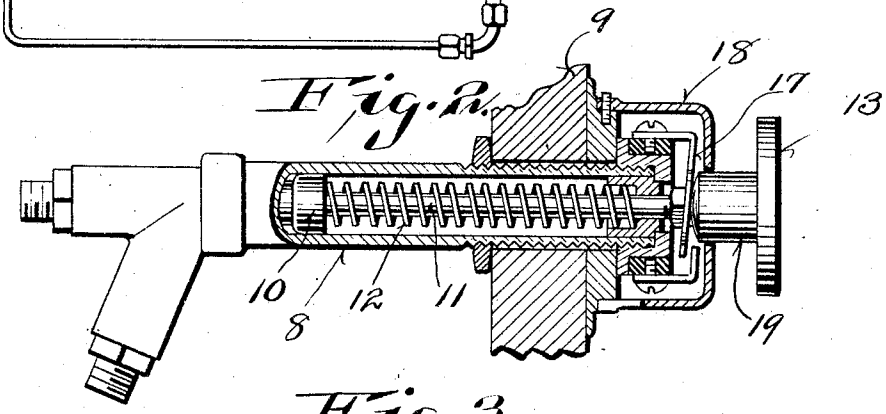


Fig. 3.

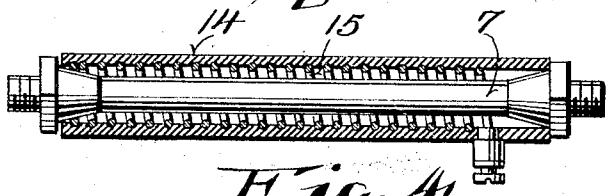
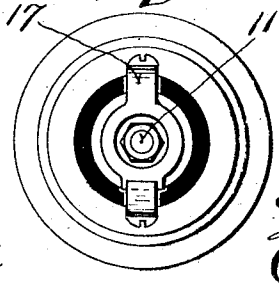


Fig. 4.



Witness.

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Patented Apr. 8, 1924. 1,489,513

UNITED STATES PATENT OFFICE.

HARRY E. ANSON, OF MILWAUKEE, WISCONSIN.

HEATING DEVICE FOR PRIMERS.

Application filed February 20, 1922. Serial No. 537,882.

To all whom it may concern:

Be it known that I, HARRY E. ANSON, a citizen of the United States, and resident of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Heating Devices for Primers; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to a heating device for primers and has especial reference to a device of this kind which is adapted to be used on automobiles for heating the priming liquid prior to its introduction into the engine cylinder.

The general object of the invention is to provide improved means for heating the priming liquid electrically, which means will be operative only at the time when the primer is operated.

A more specific object of the invention is to provide an electric heating coil for the primer duct, which is connected with an electric circuit having a switch normally open, but automatically closed whenever the primer is used.

With the above and other objects in view, the invention consists in certain details of construction, which will be more fully explained with reference to the accompanying drawing, in which—

Figure 1 is a sectional view of a portion of an engine cylinder with my invention connected therewith.

Figure 2 is a longitudinal sectional view of the priming device.

Figure 3 is a longitudinal sectional view of the heating coil, and

Figure 4 is a detail, plan view of the switch.

Referring in detail to the drawing, the numeral 5 indicates the cylinder of an internal combustion engine having a fuel inlet 6 with which is connected a duct 7 through which a priming liquid may be introduced. Connected with the duct 7 is a cylinder 8 which is preferably secured to the instrument panel, or dash, 9 of the automobile. A plunger 10 is reciprocably mounted within the cylinder 8 and is carried by the stem 11 and normally held in its depressed position by means of a coil spring 12. A head 13 is connected with the other end of the stem for the purpose of manipulating the plunger for injecting the priming liquid into the cylinder inlet.

For the purpose of heating the liquid prior to its introduction into the cylinder, I have surrounded a portion of the duct 7 with a jacket 14 within which is carried an electric heating coil 15. This coil is heated through an electrical circuit 16, which may be connected to the battery, or any other source of electrical energy, and includes a spring switch 17 which is mounted within a casing 18, surrounding the outer end of the stem 11. A knob 19 is secured to the stem adjacent the head 13, abutting the movable member of the switch 17 and normally holding the stem open when the plunger 10 is held in depressed position by means of the spring 12.

It will be readily understood, however, that when the stem is withdrawn for the purpose of operating the primer, the switch will be released and will be immediately closed by reason of its resilient nature. While the primer is being operated, therefore, the liquid passing through the duct 7 will be heated by the coil 15 and will consequently permit easy starting of the engine.

It will be understood that the specific structure described is for the purpose of illustration only and that other equivalent structures may be easily devised for carrying out the principles of my invention. It is my intention, therefore, to include all such modifications which fall within the scope of the appended claim.

I claim:—

In a device of the character described, the combination with a primer having a duct leading to the cylinder of an internal combustion engine, a plunger for forcing priming liquid therethrough and having an enlarged head for manipulating the same, of an electric heating coil surrounding a portion of said duct, a circuit for energizing said coil and including a spring switch adjacent the plunger, a collar on said plunger adjacent its head, and a coil spring surrounding the stem of the plunger and normally holding the same depressed with the collar in engagement with the switch and holding it open, the spring switch being tensioned so as to close when the plunger is retracted for the priming operation.

In testimony that I claim the foregoing I have hereunto set my hand at Milwaukee, in the county of Milwaukee and State of Wisconsin.

HARRY E. ANSON.