

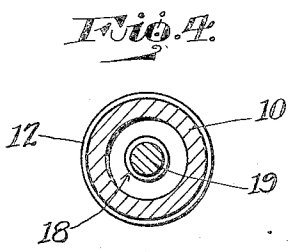
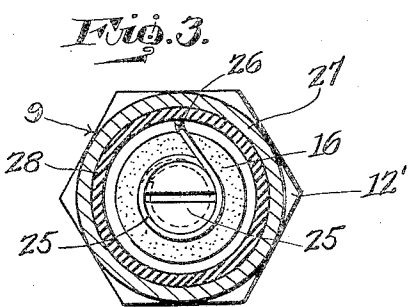
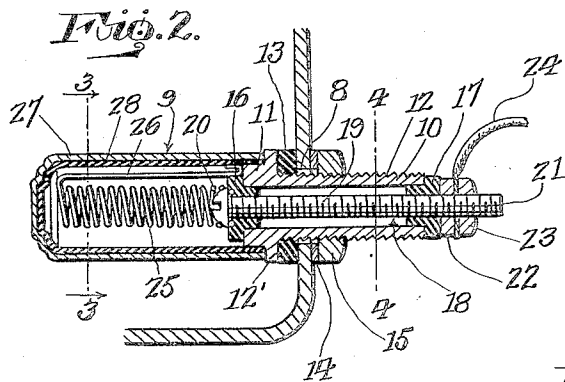
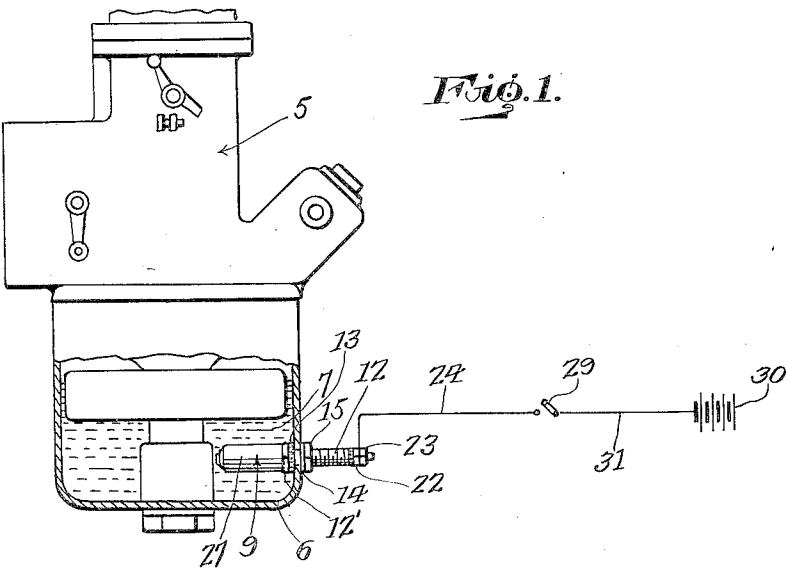
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FUEL HEATING OR VAPORIZING ATTACHMENT

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FUEL HEATING OR VAPORIZING
ATTACHMENT

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3 Claims. (Cl. 219—38)

This invention relates to a fuel heating or vaporizing attachment designed primarily for use in connection with carburetors employed in automotive vehicles operated from internal combustion engines, but it is to be understood that an attachment, in accordance with this invention may be employed in any connection for which it is found applicable, and the invention has for its object to provide, in a manner as hereinafter set forth, an attachment of the class referred to for instantaneously heating or vaporizing the liquid fuel in the well of a carburetor so as to bring about immediate combustion of a combustible charge supplied to the cylinder or cylinders of the engine whereby, especially in cold weather, to obviate the usual delay in obtaining the explosion of the charge when it is desired to start the vehicle, as well as doing away with the waste of storage battery current attendant upon the usual prolonged use of the battery in starting the vehicle in cold weather.

Further objects of the invention are to provide, in a manner as hereinafter set forth, an attachment for the purpose referred to which is simple in its construction and arrangement, strong, durable, compact, capable of being readily installed for use in connection with the wall of any type of carburetor, thoroughly efficient when used, and inexpensive to manufacture.

To the above ends essentially, and to others which may hereinafter appear, the invention consists of such part, and such combination of parts which fall within the scope of the invention as claimed.

In the drawing:

Figure 1 is an elevation, partly in section of a carburetor showing the adaptation with the well of the latter, the fuel heating or vaporizing attachment in accordance with this invention.

Figure 2 is a longitudinal sectional view of the attachment showing the adaptation thereof with respect to the carburetor well.

Figures 3 and 4 are sectional views on lines 3—3, 4—4 respectively, Figure 2.

Referring to the drawing, 5 indicates a carburetor and 6 the well of the latter containing a body of liquid fuel 7. The wall of well 6 is formed with an opening 8 for the passage of the attachment 9 into the body of liquid fuel in well 6.

The attachment 9 is anchored to carburetor 5 and it includes a sleeve 10 of conducting material of the desired length and diameter. The sleeve 10 at one end is formed with an outwardly directed annular flange 11 of a thickness greater than that of the sleeve body. The sleeve 10 has

its outer periphery threaded from the inner side of flange 11 to the other end thereof. The peripheral threads on sleeve 10 are designated 12. The sleeve 10 is passed through opening 8 and certain of its peripheral threads contact with the wall of the opening 8. That side of flange 11 opposing the inner face of the wall of well 6 is formed with a laterally disposed hexagonal extension 12'. Carried by sleeve 10 is a non-conducting washer 13 of greater diameter than that and abutting that side of flange 11 provided with extension 12'. Mounted on sleeve 10 is a non-conducting washer 14 and a clamping nut 15 which engages with threads 12. When the sleeve 10 is anchored to the wall of the well 6, the washer 13 is interposed in abutting relation between the extension 12' and inner face of said wall; the washer 14 abuts the outer face of the wall of the well 6; and the nut 15 binds against washer 14 whereby the flange 11, wall of well 6 and washers 13, 14 are clamped together and sleeve 10 is anchored to the carburetor.

Extending into the inner and outer ends of sleeve 10, as well as abutting against and extending from the end edges of the sleeve is a pair of oppositely disposed insulating flanged inner and outer bushings 16, 17 respectively. The bushing 16 abuts flange 11.

The attachment includes a conducting element 18 consisting of a peripherally threaded shank or stem 19 and a head 20. The shank 19 is arranged axially of and is of greater length than the sleeve. The outer portion 21 of shank 19 projects from the outer end of the sleeve. The projecting portion 21 of shank 19, in connection with the nuts 22, 23 threadedly engaging therewith, constitutes a binding post for the terminal of a circuit conductor 24 of a heating circuit. The shank 19 extends through and is supported axially of and in spaced relation to sleeve 10 by the bushing 16, 17. The head 20 of element 18 abuts the outer end edge of bushing 16. The nut 22 abuts the outer end edge of bushing 17.

Extending from the head 20 of element 18 is a coiled electric heater element 25 having an extension 26 at its outer end which is arranged parallel to the body of element 25 and is in electrical contact with the edge of flange 11 of sleeve 10. The element 25 is anchored at one end to and surrounds head 20.

The attachment includes a casing 27 closed at its inner end and open at its outer end. The flange 11 extends into the casing 27 at the outer end of the latter and is anchored to the casing. The edge of casing 27, at its open end, abuts the

extension 12'. The casing 27 is provided with a lining 28 of mica which extends on flange 11 and abuts the extension 12'. The extension 26 of the heater element 25 is interposed in spaced relation 5 between the body of heater element 25 and the mica lining 28.

The circuit conductor 24 leads from one of the poles of a switch 29. Extending from the battery 30 on the vehicle is a circuit conductor 31 which leads to the other pole of switch 29. The conductors 24, 31, switch 29, extension 26, sleeve 10, element 18 and wall of well 6 provide the heating circuit for heater element 25. The bushing 16, 17 insulate element 18 from sleeve 10.

15 When switch 29 is closed the heater element 25 becomes active and heats or vaporizes the fuel in well 6, the switch is then opened and the vehicle may be started immediately by the use of the self starter.

20 What I claim is:

1. In a heating or vaporizing attachment for the purpose set forth, a peripherally threaded sleeve of conducting material provided at one end with an outwardly directed flange, a pair of oppositely disposed flanged non-conducting bushings mounted in and abutting the ends of said sleeve, a conducting element mounted in said bushings, abutting the outer edge of one and extending from the outer edge of the other of said bushings, an electric heater element electrically connected to that portion of said conducting element which abuts one of said bushings, said heater element being provided with an extension in electrical contact with said flange, a closed casing element for encompassing said heater element, said casing encompassing, anchored to and extended from said flange, a pair of non-conducting washers on said sleeve for abutting opposite faces of said structure, and a clamping nut threadedly engaging with said sleeve and coacting with said washers for anchoring the sleeve to said structure.

2. In a heating or vaporizing attachment for the purpose set forth, comprising a peripherally threaded sleeve of conducting material, said sleeve being formed at its inner end with an outwardly

directed annular flange, a conducting element including a shank and a head, inner and outer annular insulating elements within and extended from the outer and inner ends of the sleeve, said shank extending through said insulating elements and supported by the latter axially of and in spaced relation to said sleeve, said head abutting the inner one of said insulating elements, said shank extending outwardly from the outer one of said insulating elements for connection to a source of electrical supply, an electrical heater element attached to and extending from said head and being formed with an extension electrically connected to said flange, a closed casing element anchored to said flange and encompassing in spaced relation said heater element, and means upon said sleeve for anchoring it to said structure, said means including a pair of non-conducting washers.

3. In a heating or vaporizing attachment for the purpose set forth, comprising a peripherally threaded sleeve of conducting material, said sleeve being formed at its inner end with an outwardly directed annular flange, a conducting element including a shank and a head, inner and outer annular insulating elements within and extended from the outer and inner ends of the sleeve, said shank extending through said insulating elements and supported by the latter axially of and in spaced relation to said sleeve, said head abutting the inner one of said insulating elements, said shank extending outwardly from the outer one of said insulating elements for connection to a source of electrical supply, an electrical heater element attached to and extending from said head and being formed with an extension electrically connected to said flange, a closed casing element anchored to said flange and encompassing in spaced relation said heater element, and means upon said sleeve for anchoring it to said structure, said means including a pair of non-conducting washers, the said insulating elements abutting the end edges of said sleeve.

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