

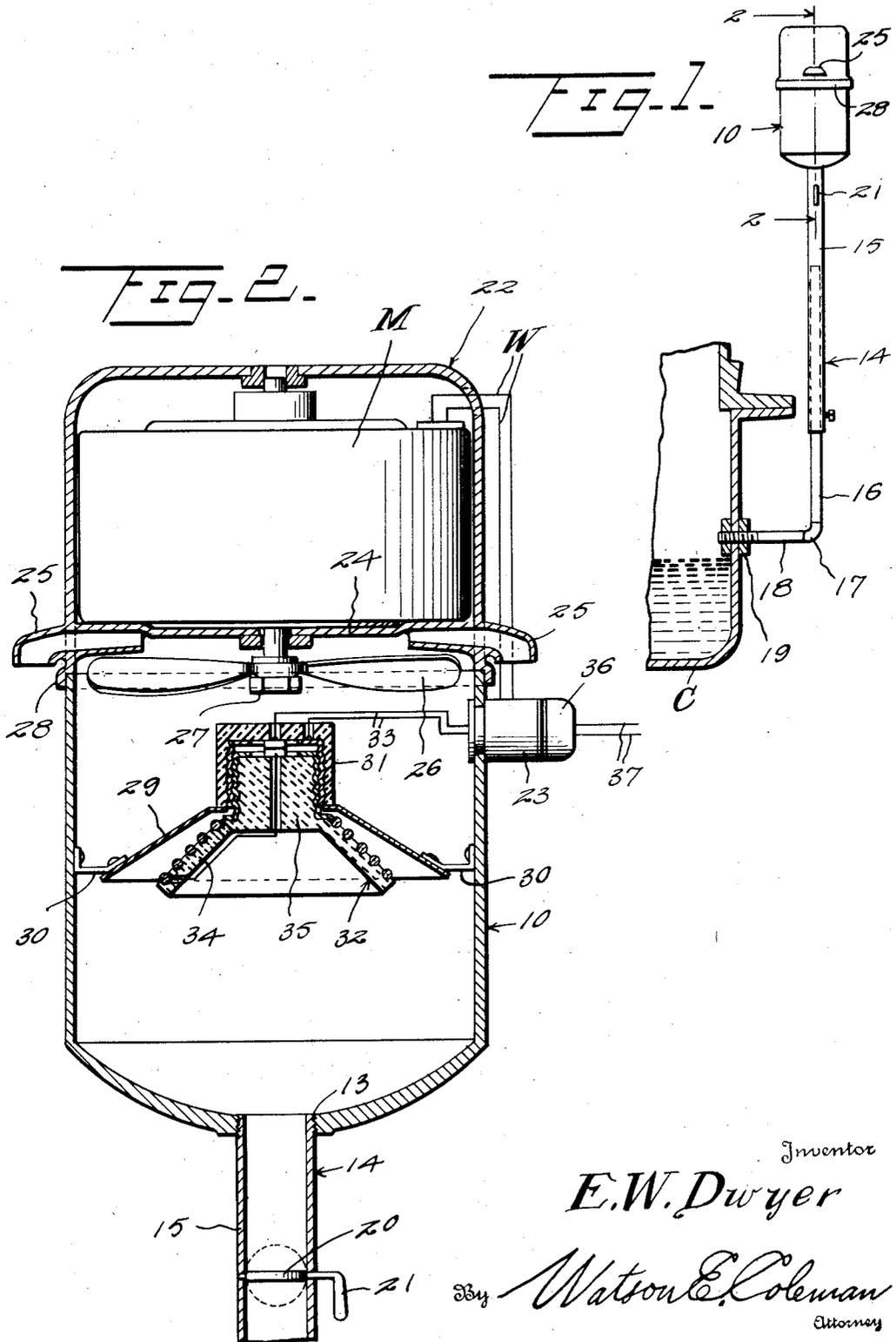
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MOTOR HEATER

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## MOTOR HEATER

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5 Claims. (Cl. 219—39)

This invention relates to heating means for internal combustion engines or accessories to the engine.

An object of this invention is to provide a means for initially heating the interior of an internal combustion engine so that the engine will promptly start during cold weather and immediately on the starting of the engine, the oil or lubricant in the engine will begin to flow freely throughout the parts of the engine.

A further object of this invention is to provide a heating means in the form of an attachment which is so constructed that it can be mounted on any of the present types of internal combustion engines or on the transmission casings or the like without disturbing the present parts of the article to which it is applied.

A still further object of this invention is to provide an attachment of this kind which is so constructed that it will not affect the ventilation of the interior of the engine after the engine has started.

The above and various other objects and advantages of this invention will in part be described in, and in part be understood from the following detail description of the present preferred embodiment, the same being illustrated in the accompanying drawing wherein:

Figure 1 is a detail side elevation of a device constructed in accordance with the preferred embodiment of this invention, mounted on the side of an internal combustion engine which is shown in fragmentary form.

Figure 2 is a fragmentary enlarged sectional view taken on the line 2—2 of Figure 1.

Referring to the drawing wherein like numerals of reference designate corresponding parts throughout the views, the letter C designates generally a crank case of a conventional internal combustion engine which is adapted to hold the usual quantity of oil. In order to heat not only the oil in the crank case C but the interior of the crank case and the inside of the engine block disposed above the crank case C, together with the other working parts of the engine on the inside of the engine block or communicating therewith, I have provided a housing generally designated as 10 which is provided with an outlet port 13 having a pipe 14 connected thereto.

This pipe 14 comprises two telescoping pipe sections 15 and 16 which has an elbow 17 connected thereto having a short extension 18 which is secured in a vertical wall of the crank case C. Lock nuts 19 may be threaded onto the extension or nipple 18, one on each side of the vertical wall

of the casing C, so as to seal this extension 18 and prevent leakage of any oil thereabout. The lower pipe section 16 telescopes the upper pipe section 15 so that the casing 10 may be disposed in the desired position relative to the side of the engine. A damper or valve 20 is disposed in the pipe section 15 and is provided with a lever 21 by means of which the valve 20 may be turned to either closed or open position.

A motor housing 22 is secured above the housing 10 and has a motor M mounted therein. This motor housing 22 is preferably sealed and wires W connect the motor M with a socket 23 secured to the side of the housing 10. The top wall of the housing 10 is integral with the bottom wall 24 of the housing 22 and air intake members 25 are disposed between the top 24 and the upper edge of the housing 10 and communicate at one end with the atmosphere and at the other end with the interior of the housing 10.

Fan blades 26 are secured to a shaft 27 of the motor M and are disposed below the intake members 25 so that when the fan blades 26 are rotated by the motor M, the air will be drawn into the housing 10 through the intake members 25 and will pass downwardly through the housing 10. Preferably the housing 22 and the wall 24 have an overlapping edge portion 28 engaging about the upper edge of the housing 10 so that when desired the two housings 10 and 22 may be separated or assembled.

A truncated cone 29 is disposed within the housing 10 between the fan blades 26 and the outlet port 13 and is supported with the base thereof spaced from the side wall of the housing 10 by means of brackets 30. A socket 31 of insulated construction is secured to the top of the truncated cone 29 and a heating element generally designated as 32 engages in this socket 33. The socket 31 is connected as by wires 33 to the socket member 23 on the outside of the housing 10 and is preferably in the same circuit as the motor M.

The heating element 32 comprises an insulated truncated cone 34 having secured thereto a plug 35 which threadably engages in the socket 23. In the use and operation of this heating means the socket member 23 is adapted to be connected to a source of current supply and is preferably connected to the house current by means of a plug 36 having wires 37 attached thereto and the motor M may be of either alternating or direct current type.

When it is desired to start the internal combustion engine, the motor M is started first and

the heating element 33 connected to the plug 36. The fan blades 26 will draw cool air through the intake ports or members 25 and this cool air will pass downwardly in the housing about the truncated cone or shield 29 which will be heated under the action of the resistance coils comprising the heating element 32. By causing the air to pass about the coils the cool air will not unduly cool the coils but this cool air will be heated through contact with the shield 29 and will pass thereabout and downwardly through the outlet 23. When the motor M is started the valve or damper 29 is swung into open position thereby permitting the air to pass downwardly into the crank case C where the air will enter the crank case at a point above the normal level of the oil or lubricant in this case C. The warm air will, after engaging the parts of the motor and heating these parts so as to warm the oil, then pass out of the motor through the conventional breather pipe.

It will be apparent from the foregoing that an exceedingly simple attachment has been provided for heating the inside of the internal combustion engine prior to the starting thereof which will permit the quick starting of the engine and do away with undue strain on the starting mechanism as is the case where the starting mechanism must start a motor or engine which is cool. While I have shown the motor M as being adapted to be interposed in a conventional house current supply, this motor may as well be connected to the battery current or any other source of electrical current supply.

It is, of course, understood that various changes and modifications may be made in the details of construction and design of the above specifically described embodiment of this invention without departing from the spirit thereof, such changes and modifications being restricted only by the scope of the following claims.

What is claimed is:—

1. The combination with an internal combustion engine of a heating means as set forth comprising a housing having an intake port and an outlet port, means for connecting said outlet port to the crank case of the engine, a valve in said connecting means, a heating medium within the housing, operating means for said valve extending outwardly of said connecting means and means intermediate said heating medium and said intake port to force the air through the housing.

2. The combination with an internal combustion engine of a heating means as set forth comprising a housing having an intake port and an outlet port, means for connecting said outlet port to the crank case of the engine, a valve in

said connecting means, said means including two telescoping members, a heating medium within the housing, operating means for said valve extending outwardly of said connecting means and means carried by the housing for forcing air therethrough.

3. The combination with an internal combustion engine of a heating means as set forth comprising a housing having an intake port and an outlet port, a pair of telescoping members connected to said outlet port and to the crank case of the engine whereby to permit the positioning of the housing at a desired point relative to the crank case, a valve carried by one of said members, a heating medium within the housing, a motor supported above the housing and fan blades connected to the motor and disposed within the housing intermediate the intake port and the heating medium to force air through the housing and operating means for said valve extending outwardly of said one member.

4. The combination with an internal combustion engine of a heating means as set forth comprising a housing having an intake port and an outlet port, telescoping pipe means connected to the outlet port and to the crank case of the engine, a valve in said pipe means, a truncated heating medium in the housing intermediate the intake port and the outlet port, a truncated shield about the heating medium, means supporting the shield and the heating medium in spaced relation to the side walls of the housing, means for forcing air through the housing and operating means for said valve extending outwardly of said connecting means.

5. The combination with an internal combustion engine of a heating means as set forth comprising a housing having an intake port and an outlet port, means for connecting the outlet port of the housing to the crank case of the engine, a valve in said connecting means, operating means for said valve extending outwardly of said connecting means, a heating medium in the housing, a truncated shield about the heating medium, means for supporting said shield and said heating medium in the housing in spaced relation to the side walls of the housing at a point intermediate the intake and the outlet ports, a motor housing secured to the housing at the end opposite from the outlet port, a motor in the housing, a fan secured to said motor and disposed within the housing intermediate the shield and the intake port and means disposed on the outside of the housing for connecting the motor and the heating medium to a source of electrical current supply.

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