Feb. 19, 1935. W. H. COOK 1,992,003

HEATER FOR AUTOMOBILES

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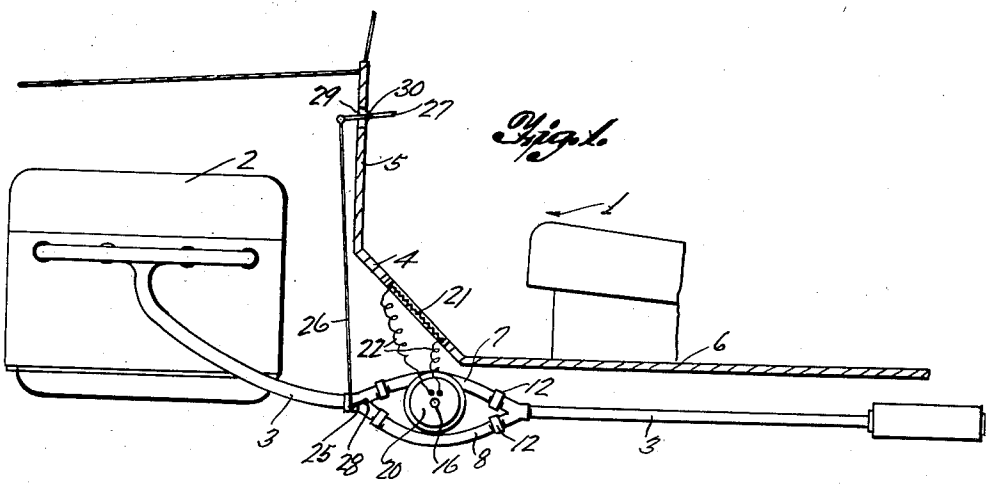


Fig. 1.

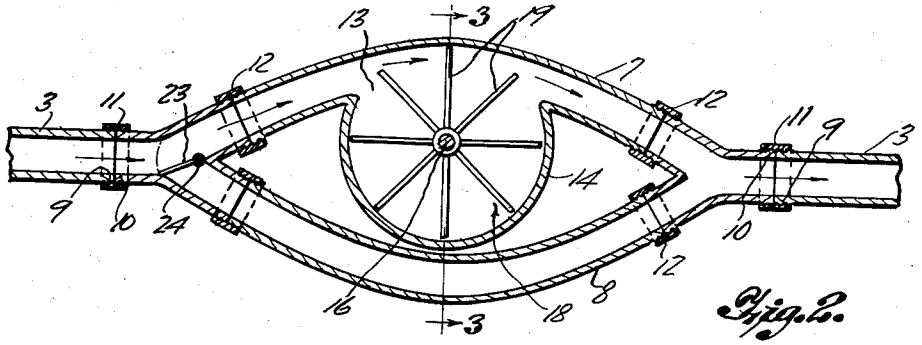


Fig. 2.

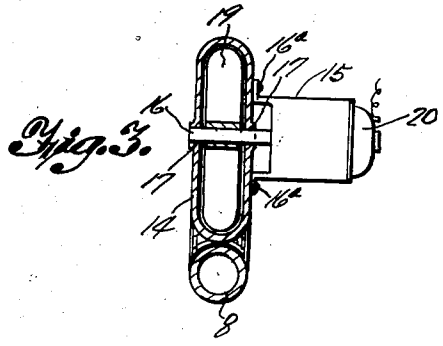


Fig. 3.

INVENTOR.
WILDER H. COOK
BY Adam E. Fisher
ATTORNEY.

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HEATER FOR AUTOMOBILES

Wilder H. Cook, Athens, N. Y.

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1 Claim. (Cl. 290—4)

This invention relates to heaters for automobiles having internal combustion engines.

One important object of the invention is to provide a form of electrical heater wherein the flow of the exhaust gases from the internal combustion engine will operate an electrical generator from which a current is led through a resistance unit suitably located in the dash in the front of the car.

Another object is to provide in combination with the exhaust pipe of an automobile having an internal combustion engine, a turbine wheel operatively mounted through an opening in such exhaust pipe so as to be driven by the flow of gases through the pipe, a generator connected to the turbine wheel, an electrical heating unit suitably located upon the automobile, and conductors for leading current from the generator to the said heating unit.

With these and such other and further objects and purposes in view as may be developed in the course of this specification, attention is directed to the accompanying drawing as setting forth a practical embodiment of the invention, and wherein

Figure 1 is an elevation partly in section, of the forward or engine end, showing the engine block and seat in full lines and the instrument board, dash or foot board and a portion of the bottom of the tonneau in sectional lines, my invention being shown mounted in connection therewith.

Figure 2 is a longitudinal section upon a greatly enlarged scale, through the essential elements comprising in combination, my invention.

Figure 3 is a section on the line 3—3 of Figure 2.

In carrying out my invention and installing same upon an automobile 1 having a power plant including a gas engine 2, from which the exhaust gases pass out rearwardly through an exhaust pipe 3, I cut out a section of the said exhaust pipe immediately under the dash 4 which ordinarily angularly connects the instrument board 5 and floor 6, and I insert in lieu of the removed section of pipe a double pipe section 7—8, which are substantially spread asunder medially in an arcuate manner as shown in Figures 1 and 2, and this double section is mounted in place in any conventional manner, as by threading the contiguous ends as shown at 9—10 and turning thereover threaded sleeves 11. If desired for facilitating assembly of the elements or for other purposes, additional and similar joints may be incorporated near the ends of the pipes 7 and 8, as shown at 12. One of the pipes, as 7, is cut away medially at its inner side to provide an elongated opening 13 over which is mounted a narrow cylindrical casing 14. A generator housing 15 is fastened at 16^a to one side of the casing 14, being arranged concentric therewith. A shaft 16 is journaled through said casing 14 and housing 15, as shown at 17, and upon this shaft, within the casing 14, is mounted a turbine wheel 18, the blades 19 of which are adapted to rotate through the opening 13 of the pipe 7, the ends of the blades being curved as shown to conform to the cross sectional curvature of the pipe and being adapted to move closely to but not to contact with the outer wall of the pipe 7. A conventional electric generator 20 (not shown in detail) is mounted within the housing 15, one element thereof, as the armature (not shown) being mounted upon the portion of the shaft 16 extended within said housing, and the other element, as the field, (not shown) being supported from the inner walls of the housing. A resistance unit 21 of conventional form is arranged upon the dash 4, and is energized by conductors 22 leading from the said generator. A gate valve 23 is mounted upon a pivot pin 24 located interiorly at the juncture of the pipes 7 and 8, at the engine end of the assembly, an end 28 of the pin being extended exteriorly. The valve 23 is controlled by the levers 25, 26, 27 pivotally connected together, the lever 25 being rigidly joined to the extended end 28 of the pivot pin 24. The hand lever 27 is passed through a slot 29 through the instrument board 5, and is provided with a pivot bearing 30. The valve 23 may be thus readily turned so as to close the mouth of either pipe 7 or 8, so as to direct the exhaust gases from the engine through the other pipe.

In operation, the pipe 8 is closed through manipulation of the valve 23, in manner pointed out, and as represented in Figure 2. The exhaust gases (not shown) from the engine are thus forced through the pipe 7 and over the blades of the wheel 18, causing same to rotate rapidly. This wheel in turn operates the generator 20, whereby current is created and sent through the unit 21 for furnishing heat for the car. By operating the valve 23 so as to close the pipe 7 and open the pipe 8, the exhaust gases are deflected through the pipe 8 and the operation of the generator is stopped.

While I have herein described a certain specific manner and method of constructing and assembling the elements of my invention, it is understood that I may vary from the same in minor details, not departing from the spirit of my invention, so as best to construct a practical device

for the purpose intended, as defined in the appended claim.

I claim:

An energizing means for electric heaters as applied to automobiles having an internal combustion engine, the same comprising in combination with the exhaust pipe of the engine the said exhaust pipe having a section cut away, a double pipe section placed in lieu of the cut away exhaust pipe section, the pipes of the double pipe section including Y-couplings for connection with the ends of the exhaust pipe and intermediate arcuate pipe sections extended between the branches of the Y-couplings thereby providing an intermediate casing space between the two arcuate pipe sections, one of the double pipes having an opening in its inner side facing the other double pipe, a casing mounted over the said opening and disposed within the said space provided between the double pipes, a turbine wheel journaled in the casing and playing thru the said opening of the one pipe, an electric generator connected to the turbine wheel, and a gate valve pivotally mounted at the junction of the branches of the Y-coupling nearest the engine and adapted to close alternately the said arcuate pipe sections.

WILDER H. COOK.